

## DIFFERENTIAL CHARGE PUMP

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ABSTRACT

A differential charge pump includes common mode circuitry for supplying a common mode voltage to a charging capacitor in the charge pump. The gate voltage of a reference transistor in a biasing branch of the differential charge pump is adjusted until the drain voltage of the reference transistor is equal to the common mode voltage when a specified bias current is flowing through the biasing branch. The same gate voltage and bias current are provided to a first transistor in a first common mode branch and a second transistor in a second common mode branch. The drains of the first transistor and the second transistor are connected to a first plate and a second plate, respectively, of the charging capacitor. In this manner, a desired common mode voltage is supplied to the charging capacitor.